means to determine said specific relation instance record.

Please Cancel Claims 86-99.

REMARKS

Claims 69-99 were pending in the above-identified application when last examined. Claims 72-81 and 86-99 are withdrawn from further consideration pursuant to 37 C.F.R. § 1.142(b), as being drawn to a non-elected invention. Therefore, Claims 69-71 and 82-85 are at issue.

Claims 69-71 and 82-85 have been amended to address the Examiner's rejection based on 35 U.S.C. § 112. Most of the amendments clarifies the original claims without changing the scope of the claims and are supported by the original claims. For example, the adjectives "selected" and "specified" have been replaced with "desired" and "provided" respectively. Furthermore, the adjective "specific" was added to distinguish a particular relation type and a particular relation instance record.

Other amendments are supported by at least the figures and Specification as set out in the example given in the Specification on page 46 line 6 to page 48 line 25. Specifically, the example attempts to find companies with the business address "555 Transistor Lane." Therefore, the "provided entity instance" would be "555 Transistor Lane" and the provided "relation type" is BU. The specific amendments and their support from the figures are given below.

Claim 69 has been amended to recite

> (ii) entity instance table means comprised
> of at least one entity instance table,
> wherein each entity type record of said
> entity definition table is associated with
> an entity instance table, and wherein each
> entity instance table is comprised of a
> plurality of entity instance records
> wherein each entity instance record is of
> an entity type of said entity definition
> table means, ...

This amendment is supported by at least Figure 5 which shows the association of entity types with entity instance tables and Figure 7 which shows Entity Instance table T.Companies (710) containing entity instances of entity type CU and Entity Instance Table T.Addresses (720) containing entity instances of entity type CU.

Claim 69 has been amended to recite

> means, operatively coupled to said relation
> definition table means, using said provided
> relation type, for retrieving from said
> relation definition table means said
> relation type record defining said provided
> relation type ...

This Amendment is supported by at least figures 6A, 6B, and 7. Specifically it is shown that REL.DEF (600) is indexed by use of the "provided relation type" BU.

Claim 69 has also been amended to recite

> means, operatively coupled to said relation
> definition table retrieving means and to
> said relation instance table means, using
> said relation type record, for retrieving
> from said relation instance table means a
> specific relation instance record
> containing said provided relation type and
> said provided entity instance record ...

This Amendment is supported by at least figure 7 which shows that the "relation type record" 600.1 of REL.DEF (600) provides T.Rel-1 containing the "provided relation type" BU and "provided entity instance record," "555 Transistor Lane," as represented by AD.4.

Claim 69 has also been amended to recite

> means, operatively coupled to said relation
> instance retrieving means and said entity
> definition table means, using said desired
> entity type, for retrieving from said
> entity definition table means a desired
> entity type record defining said desired
> entity type; ...

This Amendment is supported by at least figure 7 which shows ENT.DEF 500.1 indexed by using the "desired entity type" CU to retrieve T.Companies.

Claim 69 has also been amended to recite

> means, operatively coupled to said entity
> type record retrieving means and said

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entity instance table means, using said
desired entity type and said desired record
identifier, for retrieving from said entity
instance table means said desired entity
instance record; ...

This Amendment is supported by at least figure 7 which shows

using the "desired entity type", CU, and "desired record

identifier", .5, to retrieve the entity instance, "Expert

Electronics."

Claim 70 has been amended to recite "said relation type

record defining said provided relation type..." This amendment

serves to further clarify Claim 70 without changing the scope

of Claim 70. Therefore, this amendment is supported by at

least original claim 70. Furthermore Claim 70 has been amended

to recite "a specific relation instance table containing said

specific relation instance..." This amendment is supported by

at least Figure 7, which shows a "specific relation table,"

T.REL-1 (730), containing the "specific relation instance,"

730.2.

Claim 71 has been amended to recite

means, operatively coupled to said inquiry
record retrieving means and said relation
instance retrieving means, for retrieving
from said inquiry record said provided
relation type and said provided entity
instance record from said inquiry record;
and

means, operatively coupled to said provided
relation type and said provided entity
instance retrieving means and said relation
instance retrieving means, for providing
said provided entity instance and said
provided relation type to said relation
instance retrieving means.

This amendment is supported by at least Figure 7 which shows

that the "provided relation type," BU, and "provided entity

instance," "555 Transistor Lane," as represented by AD.4 can be

retrieved from INQ.DEF 740. Furthermore this data is used to

perform the search outlined in the example.

Claim 82 has been amended to recite

retrieving from relation definition table
means, which comprises at least one
relation type record defining a relation
type, of said relational database a

specific relation type record ...

This amendment is supported by at least Figure 7 which shows

that REL.DEF 600 contains relation type records.

Claim 82 has also been amended to recite

> retrieving from relation instance table
> means corresponding to said specific
> relation type record of said relational
> database, based on said specific relation
> type record and said provided entity, ...

This amendment is supported by at least Figure 7 which shows

that the "relation instance table," T.REL-1 can be indexed

based on "said specific relation type," BU and "said provided

entity," "555 Transistor Lane," as referred to by AD.4.

Claim 82 has also been amended to recite

> retrieving from entity definition table
> means of said relational database, based on
> said desired entity type and said desired
> record identifier, a desired entity type
> record ...

This amendment is supported by at least Figure 7 which shows

that ENT.DEF 500 can be indexed based on the "the desired

entity type," CU, to retrieve the "desired entity type record,"

500.1.

Claim 83 has been amended to recite

> retrieving from said specific relation
> instance table said specific relation
> instance record based on said specific
> relation type record and said provided
> entity.

This amendment is supported by at least Figure 7, which shows

that the "specific relation instance record," 730.2, can be

retrieved based on "said specific relation type record," 600.1

and said "provided entity," "555 Transistor Lane," as

represented by AD.4.

Claim 84 has been amended to recite

> data specifying said provided relation type
> prior to the step of retrieving a specific
> relation type record, wherein said data is
> used in said step of retrieving from
> relation instance means to determine said
> specific relation instance record.

This amendment is supported by at least Figure 7, which shows

that the "relation type," BU, can be used to determine the

"specific relation instance," 730.2.

Claim 85 has been amended to recite

> data specifying said provided entity prior
> to the step of retrieving a relation
> specific instance record, wherein said data
> is used in said step of retrieving from
> relation instance means to determine said
> specific relation instance record.

This amendment is supported by at least Figure 7, which shows

that the "provided entity," "555 Transistor Lane," as

represented by AD.4, can be used to determine the "specific

relation instance," 730.2.

No new matter is added by this amendment.

Rejections under 35 U.S.C. §112

Claims 69-71 and 82-85 were rejected "under 35 U.S.C. §

112, second paragraph, as being indefinite for failing to

particularly point out and distinctly claim the subject matter

which applicant regards as the invention."

Specifically with regard to Claim 69 the Examiner stated

that

> it is unclear what is the criteria for
> retrieving the various records from various
> tables. Retrieving a piece of data from a
> table is equivalent to retrieving another
> piece of data from the table. The claims
> do not particularly point out what is done
> to locate a specific record among other
> records in a specific table.

Claim 69 has been amended to state how the various records and

data retrieved in each step are used to retrieve additional

records and data. Therefore, Applicant respectfully submits

that Claim 69 is now clear as to the criteria for retrieving

the various records from various tables. Consequently,

Applicant, respectfully requests reconsideration and withdrawal

of this basis for rejection.

The Examiner also stated that in Claim 69

> The difference between "a selected entity
> instance record" and "a specified entity
> instance record" is not clear. The words
> "selected" and specified" do not indicate
> the flow pattern; e.g. whether the record
> is input or output.

Claim 69 has been amended to use "desired" and "provided" in

place of "selected" and "specified." Applicant, respectfully submits that "provided" and "desired" clearly indicates the flow pattern that the user inputs the "provided" data and the system outputs the "desired" data. Therefore, Applicant respectfully request reconsideration and withdrawal of this basis for rejection.

The Examiner also stated that "The effect of retrieving a relation type record defining the specified relation type is obscure." Claim 69 has been amended to recite "using said relation type record, for retrieving from said relation instance table means..." Therefore, Applicant respectfully submits that Claim 69 recites the purpose and effect of the relation type record. Therefore, Applicant respectfully request reconsideration and withdrawal of this basis for rejection.

The Examiner stated that "'Said relation instance record'" appears to have no clear antecedent basis since there could be more than one." Claim 69 has been amended to recite "a specific relation instance record"; thus clarifying the antecedent basis. Therefore, Applicant respectfully request reconsideration and withdrawal of this basis for rejection.

The Examiner also stated that Claim 69 "does not point out what identified the specific relation instance record which is retrieved." Claim 69 has been amended to recite "retrieving ... a specific relation instance record containing said provided relation type and said provided entity instance record ..." Therefore, Applicant respectfully submits that Claim 69 now clearly claims how the specific relation instance record is identified. Accordingly Applicant respectfully request reconsideration and withdrawal of this rejection.

Finally, with regards to Claim 69 the Examiner stated that

> Generally, it is unclear how various means
> for retrieving various records differ from
> each other. Although the records are
> specified by types, identifier etc. the
> means recited do not expressly use these
> types and identifiers to access the

records.

Claim 69 has been amended specifically to address the Examiner's rejection. Specifically, Claim 69 has been amended to recite how the records are used by the means. Therefore, Applicant respectfully submits that Claim 69 as amended traverses the Examiners objection based on 35 U.S.C. §112. Therefore, Applicant respectfully request reconsideration and withdrawal of the rejection of Claim 69 under 35 U.S.C. §112.

With regards to Claim 70, the Examiner stated that "it is unclear how the table identifier relates to the tables in Claim 69." Claim 70 has been amended to recite "wherein said table identifier identifies a specific relation table containing said specific relation instance in said relation instance table means..." Thus Claim 70 now clearly recites the relation of the table identifier to Claim 69. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection of Claim 70 under 35 U.S.C. §112.

With regards to Claim 71, the Examiner stated that

> merely retrieving an inquiry record would
> not accomplish anything. The claim does
> not point out how the inquiry table means
> is related to the other means. It appears
> to be an independent unit. The relation
> type and the instance record are not used
> for anything.

Claim 71 has been amended to recite

> means, operatively coupled to said inquiry
> record retrieving means and said relation
> instance retrieving means, for retrieving
> from said inquiry record said provided
> relation type and said provided entity
> instance record from said inquiry record;
> and

> means, operatively coupled to said provided
> relation type and said provided entity
> instance retrieving means and said relation
> instance retrieving means, <u>for providing
> said provided entity instance and said
> provided relation type to said relation
> instance retrieving means</u>. (emphasis added)

Applicant respectfully submits that Claim 71 now relates the inquiry table means to the other means since the inquiry table contains means "for providing said provided entity instance and

said provided relation type to said relation instance

retrieving means." Therefore, Applicants respectfully request

reconsideration and withdrawal of the rejection of Claim 71

under 35 U.S.C. §112.

With regards to Claim 82, the Examiner stated that

> merely retrieving a specified relation type
> does not particularly point out what has
> been done to retrieve it. Retrieving one
> piece of data from a table is equal to
> retrieving another piece of data from the
> table. It is unclear what is the
> relationship between the relation
> definition table means, relation type
> record and the relation instance table
> means. As above, in the second step of
> retrieving it is unclear what has been done
> to retrieve; e.g. how the relation instance
> record defining the specified and selected
> entities have been located. The step
> recites desired results. The same applies
> to the third step of retrieving. There is
> nothing which would cause locating the
> specific entity type record.

Claim 82 has been amended to address the Examiner's rejection.

Specifically Claim 82 has been amended to recite

> retrieving from relation instance table
> means corresponding to said specific
> relation type record of said relational
> database, based on said specific relation
> type record and said provided entity, ...

> retrieving from relation instance table
> means corresponding to said specific
> relation type record of said relational
> database, based on said specific relation
> type record and said provided entity, ...

> retrieving from entity definition table
> means of said relational database, based on
> said desired entity type and said desired
> record identifier, a desired entity type
> record ... (emphasis added)

Thus Claim 82 specifically recites the basis for the retrieving

steps as well as the relationship between the relation

definition table means, relation type record and the relation

instance table means. Therefore, Applicant respectfully

requests reconsideration and withdrawal of this basis for

rejection.

The Examiner also stated that "The words 'specified' and

'selected' do not particularly point out whether what is

selected or specified is an input value or an output value."

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Claim 82 has been amended to use "desired" and "provided" in place of "selected" and "specified." Applicant, respectfully submits that "provided" and "desired" clearly indicates the flow pattern that the user inputs the "provided" data and the system outputs the "desired" data. Therefore, Applicant respectfully request reconsideration and withdrawal of the rejection of Claim 82 under 35 U.S.C. §112.

With regards to Claims 83-85 the Examiner stated that "it is unclear how retrieving a piece of data from a table is different than retrieving any other data from the table." Claims 83-85 have been amended to address this basis of rejection. Specifically, Claim 83-85 have been amended to recite the basis for selecting the data or the use of the data. Therefore, Applicant respectfully request reconsideration and withdrawal of this basis of rejection.

With regards to Claim 83, the Examiner stated

> "a relation instance table in said relation
> instance table means" is inferential. It
> reads like a table comprises of other
> tables ...

Applicant respectfully submits that the Examiner is in error. As clearly shown in Figure 6A, REL.DEF Table 600 refers to three separate relation tables, T.Rel-1, T.Rel-2, and T.Rel-3. Thus "relation instance table means" is not limited to containing a single table. Therefore Claim 83, which has been amended to recite "a specific relation instance table in said relation instance table means ..." properly indicates that the specific relation instance table can be within the relation instance table means.

The Examiner also rejected Claim 83 under 35 U.S.C. §112 because Claim 83 "does not point out what the relation table means is." However,

> [w]hether a claim is invalid for
> indefiniteness requires a determination
> whether those skilled in the art would
> understand what is claimed when the claim
> is read in light of the specification.
> Morton Inter., Inc. v. Cardinal Chemical Co. v.
> Cardinal Chemical Co., 5 F.3d 1464, 1470, 28 USPQ2d

1190, 1194-95 (Fed. Cir. 1993)

Applicant respectfully submits that those skilled in the art reading claim 83 in light of the specification would realize that the relation instance table means can be implemented in a variety of ways and should not be limited to a specific recitation in the claim. Therefore Applicant respectfully requests reconsideration and withdrawal of this basis for rejection.

The Examiner also stated that Claim 83 "does not state that the identifier is used to locate the record. Claim 83 has been amended to recite "retrieving from said specific relation instance table said specific relation instance record <u>based on said specific relation type record and said provided entity.</u>"

 (emphasis added). Therefore, Applicant respectfully submits that Claim 83 does state the purpose for the specific relation type record. Consequently, Applicants respectfully request reconsideration and withdrawal of the rejection of Claim 83 under 35 U.S.C. §112.

With regards to Claim 84 and 85, the Examiner stated that "it is unclear what is the relevance of retrieving data from inquiry means prior to retrieving relation type record or relation instance record." Furthermore, the Examiner stated that in Claim 84 "the data specifying the relation type is not used for anything" and that in Claim 85, "the data specifying the entity is not used for anything."

Claim 84 has been amended to recite

> data specifying said provided relation type
> prior to the step of retrieving a specific
> relation type record, <u>wherein said data is
> used in said step of retrieving from
> relation instance means to determine said
> specific relation instance record.</u>
> (emphasis added)

Claim 85 has been amended to recite

> data specifying said provided entity prior
> to the step of retrieving a relation
> specific instance record, <u>wherein said data
> is used in said step of retrieving from
> relation instance means to determine said
> specific relation instance record.</u>

(emphasis added)

Thus in both Claim 84 and Claim 85 the data is used in "said step of retrieving from relation instance means." Therefore, the data must be retrieved from the inquiry means prior to retrieving the relation type records as recited in the claims. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection of Claim 84 and 85 under 35 U.S.C. §112.

Rejection of Claims Under 35 U.S.C. § 103

The Examiner rejected Claims 69-71 and 82-85 "under 35 U.S.C. § 103 as being unpatentable over Shimaoka et al in view of Green."

The Examiner concedes that in "Shimaoka et al all entities are stored in one file and all relationships are stored in another file." However, the Examiner asserts that "Green ... in figure 1 shows that it is well-known to provide a table for each entity type and a table for each relation." Furthermore, the Examiner asserts that multiple tables for entity types and relations "is also evidenced by the database join operations commonly performed in the art."

Applicant respectfully submits that the Examiner's assertions are not supported by the prior art. Figure 1 of Green only depicts relation tables not entity tables. As stated in Green, col. 3, lines 39-42, "there are <u>three relations:</u> S 101, which describes the suppliers, P 103, which describes the parts and SP 105, which describes how many of each part each supplier has." Green is devoid of any teaching or suggestion of using separate tables for each entity type.

Specifically, the system of Green does not store entity instances in any form outside of the relations table. In Green, entity instances "may be obtained from the relations by specifying the relations which contain the information (entity instance) and restrictions on the relations." Green, col. 3,

lines 47-50. Green gives the example that "the name of the supplier in London may be obtained by specifying the relation S and the restriction that the value of the column SNAME be returned from all rows in which CITY='LONDON'." Therefore, in the System of Green there is no separate storage of entity instances from the relations and certainly no suggestion of having multiple entity instance tables.

Applicant also respectfully submits that the JOIN operation found in other art does not evidence multiple tables for different entity types. For example, in Tashiro et al. the JOIN operation refers to processing search rules not for joining entity instance tables. Therefore, the presence of the JOIN operation does not evidence multiple entity instance tables.

Since none of the Art cited by the Examiner uses a multiple entity instance tables, none of the references would require an entity definition table, with entity type records which define the entity instance tables.

The Examiner also stated that "It would have been obvious to one of ordinary skill in the art to store the entities and relationships by type in order to reduce the search space and Shimaoka et al clearly suggests this by using an item code to distinguish various types." Applicant, respectfully submit that since Shimaoka specifically teaches to use one file for the entity instances that the use of item codes would not lead one of ordinary skill to use separate entity instance tables for each entity type based on Shimaoka. Furthermore, as discussed above, Green also does not teach or suggest using multiple entity instance tables for each entity type. Therefore, Applicants respectfully submit that the using an entity instance table for each entity type is novel and nonobvious over the prior art.

Claim 69 recites

> (ii) entity instance table means comprised
> of <u>at least one entity instance table,</u>

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> wherein each entity type record of said
> entity definition table is associated with
> an entity instance table, and wherein each
> entity instance table is comprised of a
> plurality of entity instance records
> wherein each entity instance record is of
> an entity type of said entity definition
> table means, ... (emphasis added)

As discussed above, using an entity definition table to define entity instance tables based on entity type records is not taught or suggested by the prior art. Therefore, Applicant respectfully submits that Claim 69 is patentable over both Shimaoka et al and Green as well as their combination. Accordingly, Applicant requests reconsideration and withdrawal of the rejection of Claim 69 under 35 U.S.C. §103.

Applicant respectfully submits that Claims 70-71, which are dependent upon Claim 69, are patentable for at least the reasons given above with regards to Claim 69.

Claim 82 recites

> retrieving from entity definition table
> means of said relational database, based on
> said desired entity type and said desired
> record identifier, a desired entity type
> record wherein said desired entity type
> record defines said desired entity type and
> specifies a desired entity instance table
> of said relational database;

As discussed above, having a "desired entity instance table" for the "desired entity type" is not taught or suggested by the prior art. Therefore, Applicant respectfully submits that Claim 82 is patentable over both Shimaoka et al and Green as well as their combination. Accordingly, Applicant requests reconsideration and withdrawal of the rejection of Claim 82 under 35 U.S.C. §103.

Applicant respectfully submits that Claims 83-85, which are dependent upon Claim 82, are patentable for at least the reasons given above with regards to Claim 82.

CONCLUSION

In view of the above amendments and remarks, it is respectfully submitted that Claims 69-71 and 82-85 are in

condition for allowance and a Notice of Allowance is respectfully requested. If the Examiner contemplates action other than allowance of all the pending claims, the Examiner is requested to call Applicants' attorney below at **(408) 453-9200.**

Respectfully submitted,

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